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Translating intellectual property into economic outcomes

Singapore Management University

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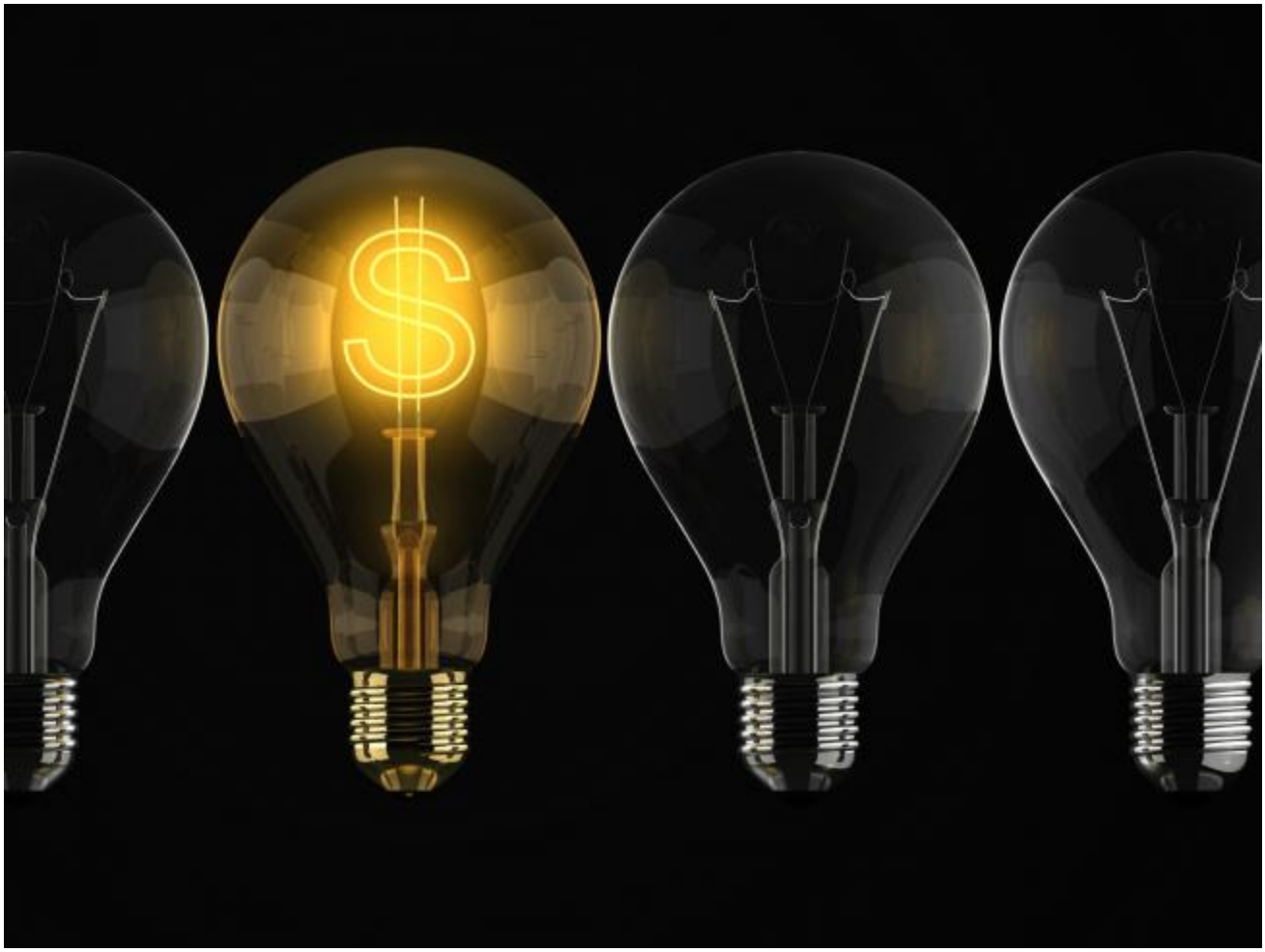

By Arcot Desai Narasimhalu

Many nations are struggling with the same challenge – how to convert their upstream R&D investments into growth elements of their national economies. And, Singapore is no exception.

Let us first examine the current common practices. Universities and publicly funded research and development labs, centres and institutes tend to identify white spaces in science and technology and create inventions leading to intellectual property. Quite often these institutions believe that such intellectual property requires protection in the form of a patent or other suitable mechanism. Inventors often had an initial application for their inventions.

History has often proven that the best means of realising the value of an invention may not be the initially intended application. A popular example is the steam engine. Inventors created steam engine to pump water from the deepest mines to the surface. However, the most value extracted from steam engine as an invention was when they were applied to railroads. A more recent example is that of a molecule created by Professor Dennis Liotta of Emory University. His original application for the molecule was to manage or cure cancer. However, it turned out to be more effective for HIV and ended up being used in as much as 94 percent of HIV cocktails netting Emory a one-time license fee of around US$500 million.

This brings us to the next key issue. Are companies waiting in long queues to license the IP (intellectual property) from universities and research institutes? My own experience tells me otherwise.

There are very few exceptional situations when companies do not mind licensing third party intellectual property. Companies license such third party IP only when they are under intense competitive time pressure to respond to market demands, or when the cost of creating a substitute or duplicate is enormously expensive. When the companies have the luxury of time on their side, they will almost invariably invest in finding substitutes given that they usually have sufficient funds for investing in their future. Even when they face intense time sensitive market pressures, they will license only if they believe that the IP owner has the muscle to enforce their rights. There have been several instances of companies blatantly availing of third party IP without license for developing new products or services. They will then end up either challenging the legality of IP rights or settling out of courts if the IP-based product or service leads to substantial revenues and profits for the company.

Alas, many universities and research institute continue to invest in protecting their IP by setting up TTO or TLOs that rarely break even. Rarely do they realise that between one to three percent of all patents have been commercialised.

So, what is the solution to this impasse - mountains of P waiting for their knights in shining armour riding on white horses? A major factor that IP-generating institutions ought to realise is that it is not always the best invention that is successful in the markets. It is often an enterprising team that invests its sweat equity in translating IP into hills, if not mountains of gold. What these entrepreneurial teams bring is the alchemy or know-how on crafting the most appropriate go to market strategy for the IP they are working with.

It is therefore time that universities and research institutes work hand in glove to mint entrepreneurial teams who will convert inventions into innovations. This requires several national agencies and ministries taking bold bets and creating new pedagogical programmes that are most unconventional. It does not require the adoption of best practices in education since best practices indicate that that is passé. It requires enlightened leaders creating the next or emerging practices in entrepreneurial education. Needless to say, one is not expected to hit the bull's eye with the first shot. Creating emerging practices require a lot of experimentation and patience for iterative learning using failure as stepping stones in a climb towards to the pot of gold at the end of the innovation rainbow. And the investment required for such pedagogical experimentation will be much far less than one year’s upstream R&D investment.

This is a call to action to governments to start creating practice-oriented programmes that will move a new class of learners through the different stages of entrepreneurship using the intellectual property that is lying idle, begging to be brought to market.

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